

AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior listings and versions:

1. (currently amended) A polypeptide for use as an autotransporter antigen, the polypeptide comprising the amino acid sequence shown in (a) ~~an amino acid sequence selected from the group consisting of SEQ ID NO: 54, SEQ ID NO: 6, SEQ ID NO: 55 or SEQ ID NO: 86 and, SEQ ID NO: 56, SEQ ID NO: 78, and SEQ ID NO: 79, (b) an amino acid sequence having at least 50% sequence identity to an amino acid sequence of (a), or (c) an amino acid sequence comprising one or more fragments of at least 7 consecutive amino acids from an amino acid sequence of (a) or combinations thereof.~~

2. (original) The polypeptide of claim 1 where use is as an antigen for raising a Chlamydia pneumoniae specific immune response.

3. (original) The polypeptide of claim 2 wherein the use is for raising a systemic immune response in an individual infected with Chlamydia pneumoniae.

4. (previously presented) The polypeptide of claim 1 which is secreted into the cytoplasm of the host cell through a Type V autotransporter secretion system mechanism.

5 to 10. (canceled)

11. (currently amended) A method of eliciting an immune response in an individual comprising administering to the individual a polypeptide according to claim 1, ~~comprising: (a) an amino acid sequence selected from the group consisting of SEQ ID NO: 54, SEQ ID NO: 6, SEQ ID NO: 55, SEQ ID NO: 56, SEQ ID NO: 78, and SEQ ID NO: 79, (b) an amino acid sequence having at least 50% sequence identity to an amino acid sequence of (a), or (c) an amino acid sequence comprising one or more fragment of at least 1, 2, 3, 4, 5, 6, or 7 amino acids from an amino acid sequence of (a) or mixtures thereof.~~

12. (previously presented) A method of diagnosing an immune response in an individual comprising:

- (a) contacting a biological sample obtained from the individual with a binding agent that binds to a polypeptide according to claim 1;
- (b) detecting in the biological sample the amount of the polypeptide that binds to the binding agent; and
- (c) comparing the amount of the polypeptide to a predetermined cut-off value and thereby determining the presence of an immune response in the individual.

13 to 14. (canceled)

15. (currently amended) A composition for eliciting an immune response comprising a polypeptide according to claim 1 ~~one or more Chlamydia pneumoniae autotransporter proteins or immunogenic fragments thereof~~ and one or more immunostimulants.

16 to 17. (canceled)

18. (currently amended) The A composition according to claim 1, comprising at least two immunogenic ~~for eliciting an immune response in a subject comprising two or more Chlamydia pneumoniae autotransporter proteins or immunogenic fragments thereof.~~

19 to 20. (canceled)

21. (currently amended) A method of making an immunogenic composition ~~according to any one of claims 15 or 16 wherein the method comprises~~ comprising the step of combining one or more polypeptides according to claim 1 ~~Chlamydia pneumoniae autotransporter proteins or immunogenic fragments thereof~~ with one or more immunostimulants.

22 to 25. (canceled)

26. (currently amended): The A polypeptide according to claim 1, wherein the polypeptide comprises ~~for use as an autotransporter antigen comprising an amino acid sequence corresponding to SEQ ID NO: 86, an amino acid sequence having at least 50% sequence identity to SEQ ID NO: 86, or an amino acid sequence comprising one or more fragments of at least 7 consecutive amino acids of SEQ ID NO: 86.~~

27. (canceled)

28. (currently amended) The method of claim 11, wherein polypeptide of claim 2 ~~wherein the use is for raising a systemic immune response~~ is elicited in an individual infected with Chlamydia pneumoniae.

29. (canceled)

30. (currently amended) A method of raising an immune response in an individual, the method comprising administering to the individual a polypeptide according to claim 26 ~~comprising an amino acid sequence corresponding to SEQ ID NO: 86, an amino acid sequence having at least 50% sequence identity to SEQ ID NO: 86, or an amino acid sequence comprising one or more fragments of at least 7 consecutive amino acids of SEQ ID NO: 86.~~

31. (previously presented) A method of diagnosing an immune response in an individual, the method comprising:

- (a) contacting a biological sample obtained from an individual with a binding agent that binds to a polypeptide defined in claim 26;
 - (b) detecting in the sample the amount of the polypeptide that binds to the binding agent;
- and
- (c) comparing the amount of polypeptide to a predetermined cut-off value and thereby determining the presence of an immune response in the individual.